

The Brigade Engineer

By Major Gerald S. Law

This article compares the increased engineer cell duties for brigade combat teams (BCTs) conducting operations at Forward Operating Base (FOB) Fenty, Afghanistan, to engineer duties at Fort Carson, Colorado, and the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana. It also presents lessons learned for brigade engineers and units deploying to Afghanistan. It is not a manning discussion, nor does it propose manning adjustments.

In May 2009, 4th BCT, 4th Infantry Division, deployed from Fort Carson to Afghanistan in support of Operation Enduring Freedom. By late June, the BCT had assumed responsibility for Nangarhar, Nuristan, Kunar, and Laghman (N2KL) provinces, which cover more than 25,250 square kilometers in the eastern portion of Afghanistan.

Furthermore, the region contains several Taliban-contested routes along the Afghanistan–Pakistan border, with mountainous terrain encompassing peaks more than 15,000 feet high; narrow, steep valleys; and the strategically important Torkham Gate.

Unlike previous deployments in Iraq, the BCT's mission in Afghanistan required deployment to more than 30 FOBs, combat outposts (COPs), and observation posts throughout N2KL, in elements ranging from squad to battalion size. FOB Fenty, the brigade tactical operations center, is in the city of Jalalabad, in the southern portion of the brigade's area of operations. Here, the BCT engineer cell assumed the engineer duties and responsibilities from the departing unit and began operations. Soon the engineer cell discovered it was overwhelmed and seriously undermanned.



Afghan workers construct a guard tower at a forward operating base.

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE APR 2010		2. REPORT TYPE		3. DATES COVERED 00-00-2010 to 00-00-2010	
4. TITLE AND SUBTITLE The Brigade Engineer				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Army Engineer School,Engineer Professional Bulletin,464 MANSCEN Bldg 3201 Ste 2661,Fort Leonard Wood,MO,65473				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 4	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Local nationals build a stone wall at a U.S. base.

Duties and Responsibilities

The brigade engineer coordinates “the use of engineer and other organic or augmenting assets to conduct combat (mobility, countermobility, and survivability), general, and geospatial engineering support to the BCT,” according to Field Manual (FM) 3-90.6, *The Brigade Combat Team*. Simply, the brigade engineer is responsible for all engineer operations occurring within the brigade’s area of operations. The responsibilities are the same whether the brigade is at its home station, a training center, or on a deployment. However, the duties can vary greatly. For example, FM 3-90.6 lists 11 duties for brigade engineers, but depending on the location—Fort Carson, JRTC, or FOB Fenty—they may not perform them all.

Fort Carson

The brigade engineer cell was virtually nonexistent at Fort Carson. The BCT was not directly responsible for the construction of its facilities, and there was no requirement to design, contract, approve, or fund the facilities within the BCT’s footprint. A brigade engineer cell was not needed to track large-scale construction projects or enablers. Furthermore, there was no requirement to track improvised explosive devices (IEDs) or route clearance packages (RCPs) at Fort Carson. Therefore, the BCT decided an engineer cell was not needed and used the brigade engineer as the future operations (FUOPS) planner.

JRTC

The brigade engineer cell required minimal manning during its JRTC rotation. The BCT conducted an intensive and demanding training rotation at Fort Polk, but again, it was not responsible for the construction and expansion of its FOBs and COPs. No requirement existed for the brigade engineer or engineer cell to design, contract, fund, or track the facilities where the BCT operated. The major requirement for the engineer cell during the rotation was IED and RCP tracking, which BCT leaders decided could be performed by the assistant brigade engineer. IED and RCP tracking is a critical and important task, but it can be performed by one or two Soldiers. Therefore, JRTC operations required just one or two personnel in the brigade engineer cell with the brigade engineer again functioning as the brigade FUOPS planner.

FOB Fenty

Operations in Afghanistan require a dedicated brigade engineer and engineer cell. The owner of the area of operations is responsible for the construction, deconstruction, and expansion of its FOBs and COPs in Afghanistan. The United States Army Corps of Engineers (USACE), local and division/corps engineers are not responsible for the brigade’s construction. They are only enablers who have to be managed by the brigade. Therefore, the brigade engineer and engineer cell coordinate, contract, fund, and track

the enablers to ensure that FOB/COP construction and/or expansion operations are properly planned and executed.

Upon arrival, the brigade engineer assumed responsibility for more than 130 major construction projects occurring within the brigade's area of operations, not counting the Commander's Emergency Response Program (CERP) or USACE projects already under construction. Construction requirements increased significantly. Furthermore, the brigade engineer must coordinate and track the IEDs occurring and the RCPs operating within the BCT area of operations. Therefore, a dedicated brigade engineer and engineer cell are required during deployment.

Recommended Personnel

The following list describes the recommended personnel and associated duties found in the brigade engineer cell while conducting operations in Afghanistan:

Brigade Engineer (officer in charge of engineer cell)

- Provides engineer input for warning orders (WARNOs), fragmentary orders (FRAGOs), operations orders (OPORDs), movement orders, and deployment orders. Responsible for BCT engineer operations within N2KL.
- Informs division of all BCT engineer operations, to include FOB/COP construction, deconstruction, expansion, and RCP clearance and status.
- Coordinates RCP operations. Develops the RCP clearance schedule and ensures that it meets the BCT commander's intent. Tracks all RCP equipment, manning, and training, and keeps the BCT commander informed on all RCP issues.
- Coordinates with the BCT counter-IED cell. Advises the cell on all RCP operations and receives and implements advice for future RCP operations.

Assistant Brigade Engineer (engineer cell construction manager)

- Acts as FOB/COP construction manager. Ensures that Joint Funds Utilization Board (JFUB) packets from subordinate battalions are complete, accurate, and suitable. Ensures that purchase requests and commitments are completed and signed by the appropriate personnel. Provides design solutions and alternatives to battalion engineers.
- Acts as construction project approval and funding representative. Ensures that projects are loaded into the Project Information Management Portal. Collects all JFUB requirements from battalion engineers, prioritizes projects based on BCT commander's guidance, and presents the BCT projects to the JFUB for approval.

Logistics Civil Augmentation Program Coordinator

- Acts as Logistics Civil Augmentation Program (LOGCAP) manager. Processes LOGCAP requests from the battalions; assembles packets; ensures that the letter of

justification is signed; submits a draft letter of endorsement to the logistical support officer and sends it to BCT supply (S-4) and contracting offices; and tracks all LOGCAP requests, work orders, and contractors.

- Manages Class IV supply items. Reviews all Class IV requests for justification and completeness and submits packets to the BCT S-4 for processing.
- Coordinates U.S. contractor affairs. Develops project list for contractor teams, coordinates contractor movement to FOBs and COPs within the BCT area of operations, and coordinates contractor bill of materials requests.

Environmental Engineer Representative

- Recommends improvements to the health and welfare of Soldiers living within the BCT area of operations and recommends environmentally friendly actions for coalition forces.
- Provides input to engineer plans, WARNOs, OPORDs, FRAGOs, movement orders, and deployment orders; advises the brigade engineer on all environmental issues.

Additional Personnel

Statement of Work Writer

- Assists the engineer cell construction manager with writing approved statements of work for construction packets.

Contingency Real Estate Support Team Agent

- Helps the engineer cell legally obtain land for FOB, COP, and observation post construction and expansion. Legally enters into contracts on behalf of the Army to pay for land obtained from local nationals.

Lessons Learned

The following list describes lessons learned for brigade engineers and units deploying to Afghanistan:

Go on the Predeployment Site Survey. The predeployment site survey (PDSS) will help you become familiar with your counterpart's duties and responsibilities several months before deployment. This allows you to validate your training plan at home station, which prepares you for assuming the brigade engineer duties once in-theater.

Inform the Command Group. Ensure that the command group, or at least the BCT operations (S-3) officer, understands before the deployment what the brigade engineer's role and responsibilities are. Ensure that the S-3 understands what the engineer requirements are at home station, training centers, and during deployment. Don't let it be a surprise that you will not be the FUOPS planner once you hit the ground.

Study the Army Theater Construction Management System. Initially, this should occur on the PDSS and later, during personal research. There are mainly four different types of construction within the BCT area of operations—B-huts, Southeast Asia huts (SEAhuts), and



Afghan workers constructed these B-huts at a combat outpost.

one- and two-story brick-and-mortar structures. Learning the types of construction, the cost of each, and construction timelines before arrival will save time during the turnover of responsibilities. The BCT commander won't care if you majored in political science. You wear the castles; you're the engineer. He will expect you to know the basic in-theater construction and how to manage and track it.

Learn the Army LOGCAP process. LOGCAP augments maneuver enhancement forces with civilian contractors. There are many enablers to help with in-theater construction. The brigade engineer must understand how they are managed, funded, and tracked. Refer to Army Regulation 700-137, *Logistics Civil Augmentation Program* (LOGCAP), for LOGCAP processes and objectives.

Emplace an Engineer Chain of Command Within the BCT. N2KL averaged more than 130 construction projects on 35 different FOBs, COPs, and observation posts. This does not count work orders, CERP projects, or USACE projects. Additionally, the engineer cell received hundreds of e-mails from each battalion requesting construction, improvement, and/or expansion. This overwhelmed the engineer cell on a daily basis. To overcome this, the brigade engineer requested that all battalions designate a "battalion engineer" who could prioritize construction requests, turn in basic designs, track construction at the battalion level, and send reports to the brigade engineer.

Know the Duties and Responsibilities of the Brigade Engineer. Learn what is listed in FM 3-90.6. Your command group will use this as a reference. You may or may not perform the duties at home station, but you will during deployment.

Conclusion

The brigade engineer's responsibilities are the same regardless of location; however, the duties can differ greatly. At home station, the BCT is not directly responsible for the construction, deconstruction, and/or expansion of its facilities, COPs, and FOBs. Furthermore, there is no requirement to track IEDs and RCPs on an hourly basis at home station. This leads many BCTs to reduce or eliminate their engineer cells entirely and form them into a planning or training cell.

Training centers implement a requirement to track IEDs and RCPs throughout a BCT training rotation, but a requirement to implement construction enablers and manage them does not exist. For example, BCTs are not required to construct, deconstruct, or expand the COPs and FOBs where they operate during training. Many BCTs establish a small engineer cell

to track IEDs and RCPs; however, this does not accurately portray the BCT construction requirements associated with conducting operations in-theater.

The BCT requires a dedicated brigade engineer and engineer cell while conducting counterinsurgency (offensive, defensive, and stability) operations in Afghanistan. Construction, a major component of stability operations, occurs on a large scale in support of coalition forces and local nationals. While the BCT is deployed, there are many agencies available to design, contract, and fund construction projects; however, the BCT is responsible for managing enablers and tracking projects. Therefore, the brigade engineer has a demanding and important responsibility to fulfill while the BCT is deployed, which requires a dedicated engineer cell able to coordinate numerous construction projects, track IEDs, and manage RCPs.



Major Law is the brigade engineer for 4th Brigade, 4th Infantry Division. Past assignments include detachment commander and battalion operations officer with 3d Battalion, 61st Engineer Regiment, 5th Armored Brigade (Training Support Brigade), First Army; assistant brigade engineer, company commander, 44th Engineer Battalion, 2d Infantry Division; platoon leader, 618th Light Equipment Engineer Company, 82d Airborne Division; and platoon leader and assistant brigade engineer, 307th Engineer Battalion, 82d Airborne Division. He holds an associate's in welding engineering from Ricks College; a bachelor's in industrial engineering from Utah State University; a master's in geology and geophysics from the University of Missouri-Rolla (now Missouri University of Science and Technology); and a master's of military arts and sciences from the United States Army Command and General Staff College.